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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/701,144	11/03/2003	Robert D. Christiansen	100204364-1	4838

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EXAMINER	
WILLS, LAWRENCE E	

ART UNIT	PAPER NUMBER
2625	

NOTIFICATION DATE	DELIVERY MODE
07/15/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/701,144	CHRISTIANSEN ET AL.	
	Examiner	Art Unit	
	LAWRENCE E. WILLS	2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 November 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed November 11, 2007 have been fully considered but they are not persuasive. On page 10 of the remarks, applicant suggests:

"Consequently, Christodoulou fails to teach or suggest (a) rasterizing, by a primary printer of the multiple printers, a portion of a print job to input raster bits into a raster buffer associated with the primary printer, (b) determining a time taken to rasterize the portion of the print job, and then (c) identifying, by the primary printer, a potential underflow condition of the raster buffer, the potential underflow condition occurring if the determined time taken to RIP the portion of the print job is greater than a time that will be taken by the primary printer to print the portion of the print job."

However, Christodoulou teaches a method for cooperative rasterization of print data in an enterprise network, the enterprise network including multiple printers 42A, 42B, 42C (Figure 2B), the method comprising: rasterizing, by a primary printer 42A of the multiple printers, a portion of a print job to input raster bits into a raster buffer associated with the primary printer; (Step 508,510 or Step 526,530 in Figure 5A) determining a time taken to rasterize the portion of the print job (determining the ripping capacity of each printer, paragraph 0034); identifying, by the primary printer, a potential underflow condition of the raster buffer; (Step 506 in Figure 5A and Paragraph [0033]), the potential underflow condition occurring if the determined time taken to RIP the portion of the print job is greater than a time that will be taken by the primary printer to print the portion of the print job (bottlenecks in the print pipeline,

paragraph 0031); responsive to identifying, the primary printer communicating an un-rasterized portion of the print job to the secondary printer 42B for the secondary printer to rasterize, the primary printer not rasterizing the un-rasterized portion; (Step 522, 528 in Figure 5A) receiving, by the primary printer, raster bits corresponding to the un-rasterized portion from the secondary printer; (Step 542 in Figure 5B) and printing, by the primary printer, all raster bits corresponding to the print job. (Step 532, 544 in Figure 5B). With regard to claims on computer readable medium (as in claims 11-18), Christodoulou further teaches the use of system software and computer programs to perform the cooperative rasterization of print data in an enterprise network, (Paragraph [0030]).

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. **Claims 1-20** are rejected under 35 U.S.C. 102(b) as being anticipated by **Christodoulou et al. (US Patent Application Publication No. 2002/0102119)**.

With regard to claims 1, 11, and 13, Christodoulou teaches a method for cooperative rasterization of print data in an enterprise network, the enterprise network including multiple printers 42A, 42B, 42C (Figure 2B), the method comprising: rasterizing, by a primary printer 42A of the multiple printers, a portion of a print job to input raster bits into a raster buffer associated with the primary printer; (Step 508,510 or Step 526,530 in Figure 5A) determining a time taken to rasterize the portion of the print job (determining the ripping capacity of each printer, paragraph 0034); identifying, by the primary printer, a potential underflow condition of the raster buffer; (Step 506 in Figure 5A and Paragraph [0033]), the potential underflow condition occurring if the determined time taken to RIP the portion of the print job is greater than a time that will be taken by the primary printer to print the portion of the print job (bottlenecks in the print pipeline, paragraph 0031); responsive to identifying, the primary printer communicating an un-rasterized portion of the print job to the secondary printer 42B for the secondary printer to rasterize, the primary printer not rasterizing the un-rasterized portion; (Step 522, 528 in Figure 5A) receiving, by the primary printer, raster bits corresponding to the un-rasterized portion from the secondary printer; (Step 542 in Figure 5B) and printing, by the primary printer, all raster bits corresponding to the print job. (Step 532, 544 in Figure 5B). With regard to claims on computer readable medium (as in claims 11-18), Christodoulou further teaches the use of system software and computer programs to perform the cooperative rasterization of print data in an enterprise network, (Paragraph [0030]).

With regard to claims 2 and 12, Christodoulou teaches evaluating, by the primary printer 42A, whether communicating the un-rasterized portion to the secondary printer 42B would at least minimize the potential underflow condition; and only performing the communicating if the evaluating indicates that operations of the secondary printer to assist the primary printer in its rasterization operations would at least minimize the potential underflow condition. (Step 506 in Figure 5A and Paragraph [0033]).

With regard to claims 3 and 14, Christodoulou teaches determining objective criteria comprising respective amounts of time for: the primary printer 42A to transmit the un-rasterized portion to the secondary printer 42B, the secondary printer to rasterize the un-rasterized portion, and the primary printer to receive the raster bits from the secondary printer, (See Step 506 in Figure 5A and Paragraph [0033]).

With regard to claims 4, Christodoulou teaches the respective amounts of time are based on data persisted by the primary printer 42A, (Paragraph [0033])

With regard to claims 5 and 15, Christodoulou teaches determining, by the primary printer 42A, that operations of the secondary printer 42B to assist the primary printer in its rasterization operations would eliminate the potential underflow condition, (See Step 506 in Figure 5A and Paragraph [0033]).

With regard to claims 6 and 16, Christodoulou teaches responsive to identifying, the primary printer 42A calculating a number of secondary printers of the multiple printers to communicate respective un-rasterized portions of the print job to

respectively rasterize, the secondary printer 42B being included in the number, the un-rasterized portion being included in the respective unrasterized portions; (Step 524 in Figure 5A and Paragraph [0033]) not rasterizing, by the primary printer, any of the respective un-rasterized portions; (Step 528) wherein communicating further comprises, the primary printer sending the un-rasterized portions to respective ones of the number of secondary printers; and wherein receiving further comprises, receiving, by the primary printer, raster bits corresponding to the respective un-rasterized portions from respective ones of the number of secondary printers, (Step 542).

With regard to claims 7, Christodoulou teaches sending and receiving at least minimizes the potential underflow condition, (Paragraph [0033]).

With regard to claims 8, Christodoulou teaches sending and receiving eliminates the potential underflow condition, (Paragraph [0033]).

With regard to claims 9 and 17, Christodoulou teaches further calculating the number of secondary printers further comprises determining the number according to the following: SecondaryPrinterCount = (RipTime – PrintEngineTime)/PrintEngineTime, (Paragraph [0033]).

With regard to claims 10 and 18, Christodoulou teaches further calculating the number of secondary printers further comprises determining the number according to the following: SecondaryPrinterCount =RIPTime for a Single Page/(Transfer Time + Receive Time), (Paragraph [0033])

With regard to claims 19, Christodoulou teaches a computing device 40 for cooperative rasterization of print data in an enterprise network, the enterprise network comprising a primary printer 42A and at least one secondary printer 42B, the computing device comprising: a processor 50; and a memory 52 coupled to the processor, the memory comprising computer-program instructions executable by the processor, the computer-program instructions comprising instructions for: sending, by the primary printer, an un-rasterized portion of the print job to a secondary printer in the enterprise; (Step 528 in Figure 5A) receiving, by the primary printer, associated raster bits from the secondary printer, the associated raster bits having been generated by the secondary printer from the un-rasterized portion; (Step 542 in Figure 5B) and responsive to receiving, inserting, by the primary printer, the associated raster bits into the raster buffer such that raster buffer underflow conditions are avoided at the primary printer, (Step 636 in Figure 6). In addition, see Paragraph [0029].

With regard to claims 20, Christodoulou the computer-program instructions further comprise instructions for: evaluating in view of anticipated raster buffer underflow whether the primary printer will complete printing the print job faster than if the secondary printer assists the primary printer to rasterize an un-rasterized portion of the print job; and performing the operations of sending, receiving, and inserting only if it has been determined that the primary printer will not print the print job as

quickly without rasterizing assistance from the secondary printer, (Step 506, 522 and Paragraph [0033]). In addition, see Paragraph [0029].

Conclusion

3. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LAWRENCE E. WILLS whose telephone number is (571)270-3145. The examiner can normally be reached on Monday-Friday 9:30 AM - 6:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, King Poon can be reached on 571-272-7440. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/King Y. Poon/
Supervisory Patent Examiner, Art Unit 2625

LEW
July 7, 2008